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TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. ITL.1099US
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In Re: *Applications of:* Achintya K. Bhowmik, et al.

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/814,402	March 31, 2004	Jessica T. Stultz	21906	2873	5383

Invention: Single Crystal Electro-Optic Film on Silicon Imager

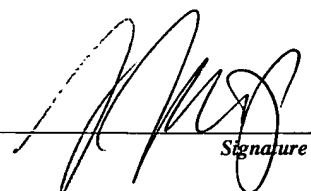
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Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on:  
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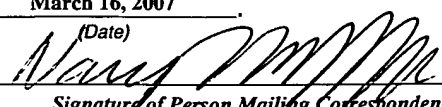
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Dated: **March 16, 2007**

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cc:



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:

Achintya K. Bhowmik, et al.

Serial No.: 10/814,402

Filed: March 31, 2004

For: Single Crystal Electro-Optic Film on  
Silicon Imager

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Art Unit: 2873

Examiner: Jessica T. Stultz

Atty Docket: ITL.1099US  
(P18549)

Assignee: Intel Corporation

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**APPEAL BRIEF**

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Nancy Meshkoff

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**REAL PARTY IN INTEREST**

The real party in interest is the assignee Intel Corporation.

**RELATED APPEALS AND INTERFERENCES**

None.

### **STATUS OF CLAIMS**

Claims 1-28 (Rejected).

Claims 1-28 are rejected and are the subject of this Appeal Brief.

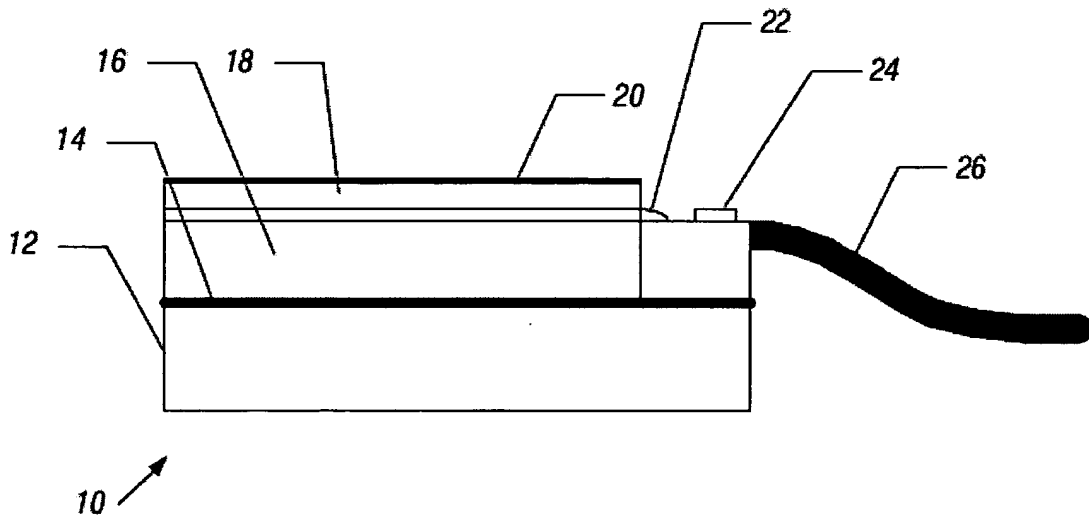
## **STATUS OF AMENDMENTS**

All amendments have been entered.

## SUMMARY OF CLAIMED SUBJECT MATTER

In the following discussion, the independent claims are read on one of many possible embodiments without limiting the claims:

1. A method comprising:  
displaying an image using a second order non-linear electro-optic effect (Figure 1, item 18, specification at page 3, lines 19-24 and page 4, line 8-page 5, line 18).

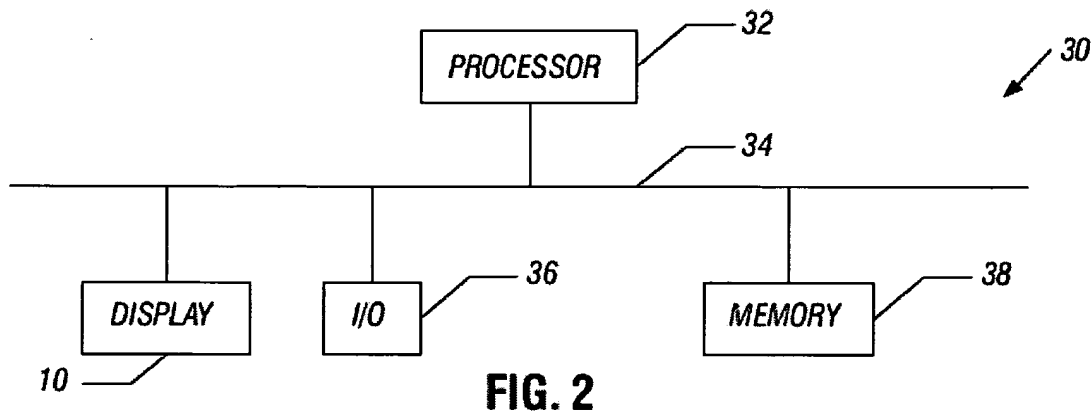


**FIG. 1**

12. An imager comprising:  
a second order non-linear electro-optic film (Figure 1, item 18, specification at page 3, lines 19-24 and page 4, line 8-page 5, line 18).



20. A system comprising:  
a processor (Figure 2, 32); and  
an imager (Figure 2, 10) coupled to said processor, said imager including a second order non-linear electro-optic effect film (Figure 1, 18, specification at page 3, lines 19-24).



At this point, no issue has been raised that would suggest that the words in the claims have any meaning other than their ordinary meanings. Nothing in this section should be taken as an indication that any claim term has a meaning other than its ordinary meaning.

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

- A. Whether claims 1, 4-6, 12-18, and 20-26 are anticipated under 35 U.S.C. § 102(b) by Takano (US 5,844,249).**
- B. Whether claims 2 and 7-10 are unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Henrichs (US 6,879,615).**
- C. Whether claim 11 is unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Henrichs (US 6,879,615) and further in view of Yakymyshyn (US 5,396,362).**
- D. Whether claims 19 and 27 are unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Yakymyshyn (US 5,396,362).**
- E. Whether claims 3 and 28 are unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Batchko (US 2002/0158866).**

## **ARGUMENT**

**A. Are claims 1, 4-6, 12-18, and 20-26 anticipated under 35 U.S.C. § 102(b) by Takano (US 5,844,249)?**

Claim 1 calls for displaying an image. It is not seen how anything in the cited Takano reference teaches displaying an image. The purpose of Takano is to detect defects in wires on a wiring board wherein the optical sensor includes a film of polymer non-linear optical material. See the title.

The cited material at column 16, lines 15-39 cannot reasonably be called any kind of a display. The sensor head is moved by the plane transfer means “to observe a voltage applied to a wire at an arbitrary location on a wiring board.” See column 16, lines 15-17. When the wiring board is defect free, an electric field is applied to the thin film 14 of the polymer non-linear optical material in a portion of which the wires exist and the double refractive index of the thin film of the polymer varies depending on the electrical field causing “a voltage generated by the photoelectric transducer to change depending on the changing amount.” Thus, there is no display and there is no image that is displayed. Instead, a voltage is detected.

Conversely, no electric field is generated in a portion in which no wires exist and the index of the film 14 does not vary so “the voltage generated by the transducer 46 does not change either.”

A distribution of the voltages detected by the detecting means is displayed on image processing display means (not shown) of the signal processing unit 104, such as a computer. Thus, all that is depicted are the voltages generated by the photoelectric transducer 46. The second order non-linear electro-optic effect is not used to display any image. The optical effect causes a voltage generated by the photoelectric transducer to change. This cannot reasonably be said to be displaying an image using a second order non-linear optical effect because no image is generated using that effect. The only images that are generated are to display a voltage generated by another element.

Therefore, the rejection should be reversed.

- B. Are claims 2 and 7-10 unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Henrichs (US 6,879,615)?**

For the reasons set forth in A, these rejections should be reversed.

- C. Is claim 11 unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Henrichs (US 6,879,615) and further in view of Yakymyshyn (US 5,396,362)?**

For the reasons set forth in A, this rejection should be reversed.

- D. Are claims 19 and 27 unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Yakymyshyn (US 5,396,362)?**

For the reasons set forth in A, these rejections should be reversed.


- E. Are claims 3 and 28 unpatentable under 35 U.S.C. § 103(a) over Takano (US 5,844,249) in view of Batchko (US 2002/0158866)?**

For the reasons set forth in A, these rejections should be reversed.

Applicant respectfully requests that each of the final rejections be reversed and that the claims subject to this Appeal be allowed to issue.

Respectfully submitted,

Date: March 16, 2007



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## CLAIMS APPENDIX

The claims on appeal are:

1. A method comprising:  
displaying an image using a second order non-linear electro-optic effect.
2. The method of claim 1 including forming an imager for a high end large screen rear projection high definition television.
3. The method of claim 1 including forming an imager for a front-projection system.
4. The method of claim 1 including forming a second order non-linear electro-optic film over a substrate.
5. The method of claim 4 including forming transistors in said substrate.
6. The method of claim 5 wherein forming transistors includes forming memory transistors and drive transistors in said substrate.
7. The method of claim 2 including forming a thermal interface material over a support structure and forming said substrate over said thermal interface material.
8. The method of claim 7 including forming said film of a second order electro-optic material having a switching speed on the order of at least one gigaHertz.
9. The method of claim 8 including forming said film of an electro-optic material having a switching speed of greater than 100 gigaHertz.
10. The method of claim 9 including forming said film of a stilbene-based organic molecular salt.

11. The method of claim 10 including forming said film of 4'-dimethylamino-N-methyl-4-stilbazolium tosylate.
12. An imager comprising:  
a second order non-linear electro-optic film.
13. The imager of claim 12 including a support structure covered by a thermal interface material and a substrate over said support structure.
14. The imager of claim 13 including transistors formed in said substrate.
15. The imager of claim 14 including drive transistors and memory transistors in said substrate.
16. The imager of claim 12 wherein said film has a switching speed of at least one gigaHertz.
17. The imager of claim 16 wherein said film has a switching speed of greater than 100 gigaHertz.
18. The imager of claim 12 wherein said film includes a stilbene-based organic molecular salt.
19. The imager of claim 18 wherein said film includes 4'-dimethylamino-N-methyl-4-stilbazolium tosylate.
20. A system comprising:  
a processor; and  
an imager coupled to said processor, said imager including a second order non-linear electro-optic effect film.

21. The system of claim 20 including a support structure covered by a thermal interface material and a substrate over said support structure.
22. The system of claim 21 including transistors formed in said substrate.
23. The system of claim 22 including drive transistors and memory transistors in said substrate.
24. The system of claim 20 wherein said film has a switching speed of at least one gigaHertz.
25. The system of claim 24 wherein said film has a switching speed of greater than 100 gigaHertz.
26. The system of claim 20 wherein said film includes a stilbene-based organic molecular salt.
27. The system of claim 26 wherein said film includes 4'-dimethylamino-N-methyl-4-stilbazolium tosylate.
28. The system of claim 20 wherein in said system includes a front projection display system.

**EVIDENCE APPENDIX**

None.



**RELATED PROCEEDINGS APPENDIX**

None.